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2100 Pennsylvania Avenue, NW  
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EXAMINER
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MARKHAM, WESLEY D

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/036,359

**Applicant(s)**

DREISTEIN ET AL.

**Examiner**

Wesley D. Markham

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-64 is/are pending in the application.
- 4a) Of the above claim(s) 18-33 and 35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-17, 34 and 36-64 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Acknowledgement is made of the amendments filed by the applicant on 10/18/2004, 5/11/2005, and 8/10/2005, in which (1) the specification of the instant application was amended (10/18/04), (2) one replacement sheet of drawings was submitted (5/11/05), and (3) Claim 1 was amended, Claim 6 was canceled, and Claims 36 – 64 were added. **Claims 1 – 5 and 7 – 64** are currently pending in U.S. Application Serial No. 10/036,359, with Claims 18 – 33 and 35 withdrawn from further consideration as being drawn to a non-elected invention. An Office action on the merits follows.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d) (i.e., the certified copy of German Application 10101014.1, filed on 1/5/2001), which papers have been placed of record in the file.

### ***Drawings***

3. The objection to the drawings set forth in paragraph 5 of the previous Office action (i.e., the non-final Office action mailed on 6/17/2004) is withdrawn in light of the applicant's submission of an acceptable sheet of drawings in which the arrow in Figure 2 is correctly labeled "10".

### ***Specification***

4. The objections to the specification set forth in paragraph 6 of the previous Office action are withdrawn in light of the applicant's amendment to correct the reference numbers noted by the examiner.
5. The disclosure is objected to because of the following informalities: Amended paragraph [40] contains a typographical error (i.e., the phrase "10-6" should read "10<sup>-6</sup>" in order to clearly indicate that "-6" is a superscript). Appropriate correction is required.

### ***Claim Objections***

6. The objections to Claims 6 and 34 set forth in paragraphs 7 and 8 of the previous Office action are withdrawn in light of (1) the applicant's cancellation of Claim 6 and (2) the amendment to independent Claim 1 such that Claim 8, which depends from Claim 1, and Claim 34 are no longer substantial duplicates.
7. Claims 1, 2, 44, 47, 58, and 64 are objected to because of the following informalities:
  - Claims 1, 47, 58, and 64: The phrase, "equalizing of the atmospheres of the working chamber and the lock chamber" appears to contain a typographical error and should read, "equalizing the atmospheres of the working chamber and the lock chamber" in order to correctly correspond to the claims as originally filed (i.e., previous Claim 1 did not recite "of" between "equalizing" and "the", but "of" is not underlined in the most recent amendment).

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- Claim 2: The phrase, “comprises the cleansing” appears to contain a typographical error and should read “comprises cleansing” in order to correctly correspond to the claims as originally filed (i.e., previous Claim 2 did not recite “the” between “comprises” and “cleansing”, but “the” is not underlined in the most recent amendment).
- Claim 44: The phrase, “wherein the step of controlling the temperature of the optical element comprising radiating...” contains a typographical / grammatical error and should read, “wherein the step of controlling the temperature of the optical element comprises radiating...”

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 36, 43, 46, 57, and 63 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
10. **Claims 36, 46, 57, and 63** require “A coating system according to...” However, each of the aforementioned claims depends from a “method” claim, not a “system” claim. Therefore, it is unclear whether the aforementioned claims are to be interpreted as “system” claims or “method” claims, and the scope of the claims is unclear. For the

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purposes of examination only, the examiner has interpreted Claims 36, 46, 57, and 63 to be method claims, not system claims like the preamble of the claims would suggest.

11. **Claim 43** recites the limitation "the gas" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim. Specifically, none of Claims 43, 40, or 34 previously recite or require that a gas be introduced into the lock chamber. Therefore, it is unclear what "the gas" in Claim 43 refers to, and the scope of the claim is indefinite. For the purposes of examination only, the examiner has interpreted Claim 43 to depend from Claim 42, which does provide clear and proper antecedent basis for "the gas".

### ***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each

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claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**14. Claims 1, 5, 8 – 13, 16, 17, and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over Libbey et al. (GB 869397) in view of Arnold et al. (USPN 4,824,545), in further view of Suzuki et al. (USPN 5,911,856), Sato et al. (USPN 5,766,360), and Nashimoto (USPN 5,147,498), in further view of Lewis et al. (USPN 4,560,576) for the reasons set forth in paragraphs 13, 15, 19, and 21 of the previous Office action. Regarding new Claim 36, the aforementioned combination of references also teaches that the lock chamber (i.e., either or both of chambers “21” and “22”) connects the working chamber (e.g., chamber “23”) directly to the environment (see, for example, Figure 1 of Libbey et al., which clearly shows that the lock chamber(s) are connected to the working chamber and surrounded by “the environment”, thereby connecting the working chamber directly to the environment).

**15. Claims 2 – 5 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Libbey et al. (GB 869397) in view of Arnold et al. (USPN 4,824,545), in further view of Suzuki et al. (USPN 5,911,856), Sato et al. (USPN 5,766,360), and Nashimoto (USPN 5,147,498), in further view of Lewis et al. (USPN 4,560,576), and in further view of Nissin Electric (JP 07-207427 A) and NEC (JP 03-287767 A).

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16. Specifically, the combination of Libbey et al., Arnold et al., Suzuki et al., Sato et al., Nashimoto, and Lewis et al. teaches all the limitations of Claims 2 – 5 and 13 as set forth above in paragraph 14, except for a method wherein the cleaning of the optical element in the lock chamber comprises irradiation of the optical element with UV light (Claim 2), wherein an evacuation of the lock chamber is performed during the cleaning (Claim 3), and wherein before and/or during the UV cleaning, the atmosphere in the lock chamber is enriched with a processing gas such as oxygen (Claim 4). However, it would have been obvious to one of ordinary skill in the art to perform such a cleaning process in the context of Libbey et al. in view of the teachings of Nissin Electric and NEC for the reasons set forth in paragraph 15 of the previous Office action.

17. **Claims 7 and 64** are rejected under 35 U.S.C. 103(a) as being unpatentable over Libbey et al. (GB 869397) in view of Arnold et al. (USPN 4,824,545), in further view of Suzuki et al. (USPN 5,911,856), Sato et al. (USPN 5,766,360), and Nashimoto (USPN 5,147,498), in further view of Lewis et al. (USPN 4,560,576), in further view of Nissin Electric (JP 07-207427 A) and NEC (JP 03-287767 A), and in further view of Hyodo et al. (USPN 6,355,353).

18. Specifically, the combination of Libbey et al., Arnold et al., Suzuki et al., Sato et al., Nashimoto, Lewis et al., Nissen, and NEC teaches all the limitations of Claims 7 and 64 as set forth above in paragraphs 14 and 16, except for a method wherein the treating step comprises post-cleansing the finished, coated optical elements in the



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lock chamber. However, it would have been obvious to one of ordinary skill in the art to perform such a post-cleaning process in the context of Libbey et al. in further view of the teachings of Hyodo et al. for the reasons set forth in paragraph 17 of the previous Office action.

19. **Claims 14 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Libbey et al. (GB 869397) in view of Arnold et al. (USPN 4,824,545), in further view of Suzuki et al. (USPN 5,911,856), Sato et al. (USPN 5,766,360), and Nashimoto (USPN 5,147,498), in further view of Lewis et al. (USPN 4,560,576), in further view of Tsuji et al. (JP 03-179730 A).

20. Specifically, the combination of Libbey et al., Arnold et al., Suzuki et al., Sato et al., Nashimoto, and Lewis et al. teaches all the limitations of Claims 14 and 15 as set forth above in paragraph 14, except for a method wherein the step of controlling the temperature of the optical element includes introducing a hot gas (i.e., a gas having a temperature above the temperature of the environment) into the lock chamber, whereby the temperature of the optical element is controlled / increased above the temperature of the environment at least partially by contacting the optical element with the hot gas (e.g., "by action of the gas introduced into the lock chamber"). However, it would have been obvious to one of ordinary skill in the art to heat the optical element in the lock chamber in this manner in view of the teachings of Tsuji et al. set forth in paragraph 23 of the previous Office action.

21. **Claims 34, 37 – 39, 40, 41, and 44 – 46** are rejected under 35 U.S.C. 103(a) as being unpatentable over Libbey et al. (GB 869397) in view of Arnold et al. (USPN 4,824,545), in further view of Suzuki et al. (USPN 5,911,856), Sato et al. (USPN 5,766,360), and Nashimoto (USPN 5,147,498) for the reasons set forth in paragraphs 13 and 19 of the previous Office action. Regarding new Claim 46, the aforementioned combination of references also teaches that the lock chamber (i.e., either or both of chambers “21” and “22”) connects the working chamber (e.g., chamber “23”) directly to the environment (see, for example, Figure 1 of Libbey et al., which clearly shows that the lock chamber(s) are connected to the working chamber and surrounded by “the environment”, thereby connecting the working chamber directly to the environment).
22. **Claims 42 and 43** are rejected under 35 U.S.C. 103(a) as being unpatentable over Libbey et al. (GB 869397) in view of Arnold et al. (USPN 4,824,545), in further view of Suzuki et al. (USPN 5,911,856), Sato et al. (USPN 5,766,360), and Nashimoto (USPN 5,147,498), in further view of Tsuji et al. (JP 03-179730 A).
23. Specifically, the combination of Libbey et al., Arnold et al., Suzuki et al., Sato et al., and Nashimoto teaches all the limitations of Claims 42 and 43 as set forth above in paragraph 21, except for a method wherein the step of controlling the temperature of the optical element includes introducing a hot gas (i.e., a gas having a temperature above the temperature of the environment) into the lock chamber, whereby the temperature of the optical element is controlled / increased above the temperature of

the environment at least partially by contacting the optical element with the hot gas (e.g., "by action of the gas introduced into the lock chamber"). However, it would have been obvious to one of ordinary skill in the art to heat the optical element in the lock chamber in this manner in view of the teachings of Tsuji et al. set forth in paragraph 23 of the previous Office action.

**24. Claims 47 – 52 and 55 – 57** are rejected under 35 U.S.C. 103(a) as being unpatentable over Libbey et al. (GB 869397) in view of Arnold et al. (USPN 4,824,545), in further view of Nissin Electric (JP 07-207427 A) and NEC (JP 03-287767 A), and in further view of Hyodo et al. (USPN 6,355,353 B1) for the reasons set forth in paragraphs 13, 15, and 17 of the previous Office action. Regarding new Claim 57, the aforementioned combination of references also teaches that the lock chamber (i.e., either or both of chambers "21" and "22") connects the working chamber (e.g., chamber "23") directly to the environment (see, for example, Figure 1 of Libbey et al., which clearly shows that the lock chamber(s) are connected to the working chamber and surrounded by "the environment", thereby connecting the working chamber directly to the environment).

**25. Claims 53 and 54** are rejected under 35 U.S.C. 103(a) as being unpatentable over Libbey et al. (GB 869397) in view of Arnold et al. (USPN 4,824,545), in further view of Nissin Electric (JP 07-207427 A) and NEC (JP 03-287767 A), in further view of

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Hyodo et al. (USPN 6,355,353 B1), and in further view of Tsuji et al. (JP 03-179730 A).

26. Specifically, the combination of Libbey et al., Arnold et al., Nissen, NEC, and Hyodo et al. teaches all the limitations of Claims 53 and 54 as set forth above in paragraph 24, except for a method wherein the step of controlling the temperature of the optical element includes introducing a hot gas (i.e., a gas having a temperature above the temperature of the environment) into the lock chamber, whereby the temperature of the optical element is controlled / increased above the temperature of the environment at least partially by contacting the optical element with the hot gas (e.g., "by action of the gas introduced into the lock chamber"). However, it would have been obvious to one of ordinary skill in the art to heat the optical element in the lock chamber in this manner in view of the teachings of Tsuji et al. set forth in paragraph 23 of the previous Office action.

27. **Claims 58 and 61 – 63** are rejected under 35 U.S.C. 103(a) as being unpatentable over Libbey et al. (GB 869397) in view of Arnold et al. (USPN 4,824,545) for the reasons set forth in paragraph 13 of the previous Office action. Regarding new Claim 63, the aforementioned combination of references also teaches that the lock chamber (i.e., either or both of chambers "21" and "22") connects the working chamber (e.g., chamber "23") directly to the environment (see, for example, Figure 1 of Libbey et al., which clearly shows that the lock chamber(s) are connected to the

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working chamber and surrounded by “the environment”, thereby connecting the working chamber directly to the environment).

**28. Claims 59 and 60** are rejected under 35 U.S.C. 103(a) as being unpatentable over Libbey et al. (GB 869397) in view of Arnold et al. (USPN 4,824,545), in further view of Tsuji et al. (JP 03-179730 A).

**29.** Specifically, the combination of Libbey et al. and Arnold et al. teaches all the limitations of Claims 59 and 60 as set forth above in paragraph 27, except for a method wherein the step of controlling the temperature of the optical element includes introducing a hot gas (i.e., a gas having a temperature above the temperature of the environment) into the lock chamber, whereby the temperature of the optical element is controlled / increased above the temperature of the environment at least partially by contacting the optical element with the hot gas (e.g., “by action of the gas introduced into the lock chamber”). However, it would have been obvious to one of ordinary skill in the art to heat the optical element in the lock chamber in this manner in view of the teachings of Tsuji et al. set forth in paragraph 23 of the previous Office action.

**30. Claims 34, 37 – 39, and 46** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis et al. (USPN 4,560,576) in view of Arnold et al. (USPN 4,824,545) for the reasons set forth in paragraph 25 of the previous Office action. Regarding new Claim 46, the combination of Lewis and Arnold teaches that the lock

chamber (i.e., either or both of chambers "1" and "2") connects the working chamber (i.e., growth chamber "3") directly to the environment (see, for example, the Figure of Lewis which clearly shows that the lock chamber(s) are connected to the working chamber and surrounded by "the environment", thereby connecting the working chamber directly to the environment).

### ***Response to Arguments***

31. Applicant's arguments filed on 10/18/2004 have been fully considered but they are not persuasive.
32. Regarding Claims 1 – 5, 7 – 17, and 36, the applicant argues that there is no motivation to combine Libbey, Arnold, Suzuki, Sato, Nashimoto, and Lewis as suggested by the examiner. In response, this argument is not convincing. The examiner notes that the test for obviousness is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, the combined teachings of the references do suggest performing the applicant's claimed process, and the motivation to do so is present in the prior art. For example, the combination of Suzuki, Sato, and Nashimoto reasonably suggests measuring an optical property of the coating in a "lock chamber", the advantage / motivation being (1) to provide highly accurate thickness control, which is desirable in the deposition of optical coatings such as those of Libbey, and (2) to insure that the optical property measurement is accurate by performing it in vacuum within a chamber rather than in

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the atmosphere outside of a chamber. Additionally, Lewis's teaching that interrupting the deposition process at any time to allow the surface to be optically monitored provides precise control of the coating is motivation to monitor the coating of Libbey a plurality of times throughout the deposition process.

33. The applicant also argues that Lewis fails to teach or suggest a multilayer coating (i.e., Lewis teaches a single layer coating). In response, this argument is not convincing. In making the rejection, the examiner has interpreted the first portion of the coating process of the combination of Libbey, Arnold et al., Suzuki et al., Sato, Nashimoto, and Lewis et al. to form a first coating and the second portion of the coating process (i.e., the portion of the process used to complete the film after the optical property measurement step) to be the subsequent coating step performed in the working chamber. Thus, the process suggested by the prior art deposits "multiple coatings" using at least two coating steps, as required by the claims. Please note that the claims do not exclude the same coating material from being used for each of the "multiple coatings".

34. Regarding Claims 34 and 37 – 46, the applicant argues Suzuki evaluates the optical characteristics of the coated substrate outside of the load-lock chamber, the inspection chamber of Sato is not a "lock chamber", and Nashimoto does not suggest measuring any optical properties. In response to applicant's arguments against the references individually, one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re*

*Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, the combined teachings of the references do suggest performing the applicant's claimed process, and the motivation to do so is present in the prior art. For example, the combination of Suzuki, Sato, and Nashimoto reasonably suggests measuring an optical property of the coating in a "lock chamber", the advantage / motivation being (1) to provide highly accurate thickness control, which is desirable in the deposition of optical coatings such as those of Libbey, and (2) to insure that the optical property measurement is accurate by performing it in vacuum within a chamber rather than in the atmosphere outside of a chamber. Additionally, the examiner disagrees with the applicant's interpretation that the inspection chamber of Sato is not a "lock chamber". The applicant's claimed "lock chamber" is not required to have any characteristics, structural or otherwise, that distinguish it from any other evacuable chamber – therefore, the "inspection chamber" of Sato, and any other evacuable chamber, can reasonably be interpreted to be a "lock chamber" in the context of the claimed invention.

35. Regarding the rejection of Claim 34 over Lewis and Arnold, the applicant argues that the optical measurement of Lewis is performed in the "preparation chamber", not a "lock chamber". This argument is not convincing because the "preparation chamber" of Lewis is reasonably considered to be a "lock chamber". The examiner reiterates that the applicant's claimed "lock chamber" is not required to have any characteristics, structural or otherwise, that distinguish it from any other evacuable chamber – therefore, the "preparation chamber" of Lewis, and any other evacuable



chamber, can reasonably be interpreted to be a "lock chamber" in the context of the claimed invention.

36. Regarding Claim 47, the applicant argues that the combination of references cited by the examiner fails to teach or suggest post-cleansing in a lock chamber. In response, this argument is not convincing. One would have been motivated to clean an optical element in a lock chamber in the process of Libbey by, e.g., UV cleaning, in order to produce a high quality, clean surface. Repetition of this lock chamber cleaning step after coating would have been obvious in the process of Libbey because Hyodo et al. teaches that coated glass should be cleaned after film deposition. Please note that the examiner has not relied upon Hyodo et al. to teach cleaning in a lock chamber, as the applicant appears to argue – the combination of Libbey, Nissin Electric, and NEC all suggest cleaning in a chamber.

37. Regarding Claims 58 – 63, the applicant argues that the examiner provides no evidence supporting the assertion that heating at a controlled rate would be superior. In response, this argument is not convincing. The examiner notes that the rationale to modify or combine the prior art does not have to be expressly stated in the prior art – it may be reasoned from knowledge generally available to one of ordinary skill in the art (MPEP 2144). In this case, the combination of Libbey and Arnold et al. does not explicitly teach changing the temperature of the optical element with a controlled rate of temperature change and/or maintaining the temperature of the optical element at a predetermined temperature. However, Libbey does teach heating the article (i.e., changing the temperature of the optical element) to a

required temperature (page 2, lines 78 – 93), for example 500° F (page 3, lines 80 – 84), in the lock chamber(s) without explicitly teaching that such heating is done at a “controlled rate”. It would have been obvious to one of ordinary skill in the art to perform the heating process of Libbey at a “controlled rate” (i.e., as opposed to an uncontrolled rate) because one of ordinary skill in the art would have reasonably expected such a controlled heating process to be superior to an uncontrolled heating process in achieving the objective of Libbey (i.e., heating the article to a specific, desired temperature). Put another way, there are only two possibilities for heating the substrate of Libbey – (1) at a controlled rate, and (2) at an “uncontrolled” rate. As Libbey requires heating to a specific temperature, one of ordinary skill in the art would have reasoned that a controlled heating process would be preferred so that the desired temperature is reached without either underheating or overheating the substrate. To further support the examiner’s position, please see Green et al. (USPN 5,863,843) (Col.6, lines 5 – 9) and Guardado et al. (USPN 6,222,990) (entire document, particularly Cols.8 – 9), which teach that heating a substrate at a controlled rate is preferred.

#### ***Other Prior Art***

38. The following prior art documents are also particularly relevant to the claimed invention.

- Levenstein (USPN 4,533,449), which teaches transporting an optical element back and forth between a deposition chamber and a measurement chamber,

which is also the loading chamber, through a vacuum lock. Plural coatings are deposited with measurements being taken in the measurement chamber between each coating step. This document is particularly relevant to independent Claims 1, 34, and 64.

- White et al. (USPN 6,235,634), Roeder et al. (USPN 6,284,654), Sandhu et al. (US 2003/0073318), Chittipeddi et al. (USPN 5,972,179), and Miyaji et al. (JP 04-115580 A), which all teach depositing multiple, alternating coatings by transporting a substrate back and forth between two or more chambers without exposure to the atmosphere (e.g., in a cluster tool). These documents are particularly relevant to independent Claims 1 and 64.
- Emmi et al. (USPN 6,178,660), which teaches a process in which a cluster tool is used to (1) process (e.g., coat, etch, etc.) a substrate and then (2) clean a substrate, the processing and cleaning being performed in different chambers of the cluster tool. This document is relevant to independent Claim 47.
- Ueda et al. (USPN 6,933,009) teaches a coating process in which the load-lock chamber also comprises heating elements.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley D. Markham whose telephone number is (571) 272-1422. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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